UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/916,080 | 07/26/2001 | Hechun Chen | 517 | 7951 |

47827 7590 09/20/2005

BIRCH, STEWART, KOLASCH & BIRCH LLP
PO BOX 747
8110 GATEHOUSE ROAD, STE 500 EAST
FALLS CHURCH, VA 22040-0747

| EXAMINER | |
|---|---|
| PHAN, TRI H | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2661 | |

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/916,080 | CHEN ET AL. | |
| | Examiner | Art Unit | |
| | Tri H. Phan | 2661 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment/Arguments*

1. This Office Action is in response to the Response/Amendment filed on June 9th, 2005. Claims 1-20 are now pending in the application.

### *Claim Objections*

2. Claim 16 is objected to because of the following informalities: the status of claim 16 should be corrected to -- (Currently Amended) --. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 5-9, 11-12, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Usuba et al.** (U.S.6,614,754; hereinafter refer as '**Usuba**') in view of **Richardson, C. Douglas** (U.S.5,479,608; hereinafter refer as '**Richardson**').

Regarding claims 1 and 11, Usuba discloses a method (claim 1) and a network (claim 11) comprising a processor performing steps similar to those of the method of claim 1. The method "comprising: automatically mapping a topology of network elements of the network based on

network connection information, the network connection information describing interconnections of the network elements (figures 8 and 9 as described in col. 4, lines 12-31); verifying that the network elements complete a ring formation (col. 2, lines 11-18 whereby detecting a failure in the ring is the equivalent of verifying a complete ring formation); obtaining protection information specifying a protection mechanism to be implemented on the network (col. 3, lines 25-37). Usuba does disclose wherein different path protections are performed through different network configurations depending upon the protection mechanism to be implemented on the network as disclosed in figs. 14-21; and whereby using the time slots in the working and protection channels a time-division multiplexing group is used as disclosed in col. 2, lines 11-50; col. 8, lines 64-68; but fails to explicitly disclose about the "facility fault protection (FFP)". However, such implementation is known in the art.

For example, Richardson discloses about the group facility protection in the telecommunications method and system (col. 2, lines 27-31; col. 5, lines 1-13).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention for group facility protection as taught by Richardson in the protection method of Usuba's system, with the motivation being to provide facility protection for group of paths in the cost effective and redundancy manner as disclosed in Richardson: col. 14, lines 41-47.

Regarding claims 2 and 12, in addition to features in base claims 1 and 11 (see rationales pertaining the rejection of base claims 1 and 11 discussed above), Usuba further discloses, "wherein the protection mechanism is selected from the group consisting of bi-directional line

switched ring (BLSR) protection mechanism, unidirectional path switched ring (UPSR) protection mechanism, 1:1 protection mechanism and 1+1 linear protection mechanism (col. 1, lines 33-40)."

Regarding claims 4 and 14, in addition to features in base claims 2 and 12 (see rationales pertaining the rejection of base claims 2 and 12 discussed above), the combination of Usuba and Richardson further discloses, "wherein the provisioning comprises FFP provisioning (Richardson: col. 2, lines 27-31; col. 5, lines 1-13); wherein the protection mechanism is at least one of 1+1 linear protection and 1:1 linear protection (Richardson: col. 1, lines 56-67)."

It would have been obvious to one of ordinary skill in the art at the time of invention to include the 1+1 or 1:1 protection for the purpose of providing a protection path in the network should a failure occur. The motivation for providing a protection path in the network is so that the facility protection for group of paths provides in the cost effective and redundancy manner as disclosed in Richardson: col. 14, lines 41-47.

Regarding claims 5 and 15, in addition to features in base claims 2 and 12 (see rationales pertaining the rejection of base claims 2 and 12 discussed above), Usuba further discloses, "wherein the protection mechanism is BLSR (Usuba: col. 1, lines 33-40) and the provisioning comprises TDMG (Usuba: col. 2, lines 11-18 whereby using the time slots in the working and protection channels a time-division multiplexing group is used) and FFP provisioning (Richardson: col. 12, lines 32-38).". The motivation for providing a group facility protection

(FFP) is so that the facility protection for group of paths provides in the cost effective and redundancy manner as disclosed in Richardson: col. 14, lines 41-47.

Regarding claims 6 and 16, in addition to features in base claims 5 and 15 (see rationales pertaining the rejection of base claims 5 and 15 discussed above), Usuba further discloses, "wherein the TDMG provisioning includes determining and provisioning a ring map for each network element of the network (Usuba: col. 4, lines 32-35).

Regarding claims 7 and 17, in addition to features in base claims 6 and 16 (see rationales pertaining the rejection of base claims 6 and 16 discussed above), Usuba further discloses, "wherein each network element includes at least a primary slot and optionally a secondary slot, wherein the ring map for each network element is determined by traversing the network elements protected by the BLSR protection mechanism from and in the direction of the primary slot (Usuba: col. 4, lines 26-31 where the CW direction is the primary direction)."

Regarding claims 8 and 18, in addition to features in base claims 6 and 16 (see rationales pertaining the rejection of base claims 6 and 16 discussed above), Usuba further discloses, "wherein the ring map is stored by each network element (Usuba: col. 4, lines 32-35)."

Regarding claims 9 and 19, in addition to features in base claims 6 and 16 (see rationales pertaining the rejection of base claims 6 and 16 discussed above), Usuba further discloses, "wherein the TDMG provisioning includes assigning an identification to each node to facilitate

in determining the ring map for each network element (Usuba: figure 8 and 9 where each node clearly has its own identification)."

5. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Usuba et al.** (U.S.6,614,754) in view of **Richardson, C. Douglas** (U.S.5,479,608) as applied to claims 1-2, 5-9, 11-12, 15-19 in part 4 above of this Office action, and further in view of **Tanaguchi, Atsuki** (U.S.6,122,250; hereinafter refer as '**Tanaguchi**').

Regarding claims 3 and 13, in addition to features in base claims 2 and 12 (see rationales pertaining the rejection of base claims 2 and 12 discussed above in part 4 of this office action), the combination of Usuba and Richardson further discloses, "the provisioning comprises TDMG provisioning (Usuba: col. 2, lines 11-18)." However, the combination of Usuba and Richardson lacks what Taniguchi discloses, "wherein the protection mechanism is UPSR (Tanaguchi: col. 3, lines 46-58).

It would have been obvious to one of ordinary skill in the art at the time of invention to include the UPSR protection mechanism for the purpose of providing a protection path in the network should a failure occur. The motivation for providing a protection path in the network is so that if a failure does occur (as in Taniguchi, figure 31C), then the communication between nodes can be maintained (as in Taniguchi, figure 31D).

6. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Usuba et al.** (U.S.6,614,754) in view of **Richardson, C. Douglas** (U.S.5,479,608) as applied to claims

1-2, 5-9, 11-12, 15-19 in part 4 above of this Office action, and further in view of **de Boer et al.** (U.S.6,259,837; hereinafter refer as '**de Boer**').

Regarding claims 10 and 20, in addition to features in base claims 2 and 12 (see rationales pertaining the rejection of base claims 2 and 12 discussed above in part 4 of this office action), the combination of Usuba and Richardson further discloses, "wherein the protection mechanism is one of BLSR and UPSR (Usuba: col. 1, lines 33-40) and wherein the provisioning includes TDMG provisioning (Usuba: col. 2, lines 11 -18)."

However, the combination of Usuba and Richardson lacks what de Boer discloses, "the TDMG provisioning includes bandwidth provisioning to allow a plurality of bandwidth portions, each bandwidth portion being provisioned with a different protection mechanism (de Boer: col. 5, lines 4-18 whereby assigning only the affected bandwidth to the protection mechanism, the remaining bandwidth is free to function normally or if it fails, to take advantage of another provisioning of a different instance of a protection mechanism)."

It would have been obvious to one of ordinary skill in the ad at the time of invention to include the partial bandwidth provisioning implementing a protection mechanism for the purpose of only addressing the failure on the specified bandwidth. The motivation being that the other portions of the bandwidth not affected by the failure will be left alone.

### *Response to Amendment/Arguments*

7. Applicant's arguments filed on June 9th, 2005 with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**George et al.** (U.S.4,644,532), **Gai et al.** (U.S.6,678,241), **Kinoshita et al.** (U.S.2002/0172149), **Ramamurthy et al.** (« Capacity Performance of Dynamic Provisioning in Optical Networks, Journal of Lightwave Technology", Vol. 19, No. 1, January 2001, pages 40-48) and **Huang et al.** ("A Path Protection/Restoration Mechanism for MPLS Networks", Tellabs Operations, Inc., July 2000, pages 1-14) are all cited to show devices and methods for improving topology and protection in the telecommunication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**
Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRIAN NGUYEN
PRIMARY EXAMINER

Tri H. Phan
September 15, 2005